

Locative Prepositions and Adverbs in Danish¹

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This article is concerned with the description of the boldfaced items in (1).

- (1) a. **inde i** flasken
 in in bottle_the
 b. **oppe på** taget
 up on roof_the
 c. **udad mod** havet
 outwards toward sea_the
 d. **hjem til** Århus
 home to Århus

In traditional Danish grammar, e.g. Diderichsen (1957), Allan et al. (1995), the first of the two items are considered adverbs, but I regard them as a special kind of prepositions forming complex prepositions with ordinary prepositions.

One piece of evidence in favour of this view is the data in (2) showing that the same slot may be filled with a locative particle, (2a), a locative PP, (2b), or a locative particle plus a locative PP, (2c).

- (2) a. Det skete **hjemme**.
 It happened (at) home
 b. Det skete **i Sverige**.
 It happened in Sweden
 c. Det skete **ovre i Sverige**.
 It happened over in Sweden

On the basis of such observations it has been suggested (e.g. Klima (1965), Emonds (1976), Jackendoff (1973), Jackendoff (1977), Riemsdijk (1978)) to view these locative particles as a special kind of prepositions.

The data above further suggest that the combination of locative particle and locative PP forms one constituent, corroborated by their behaviour in cleft sentences. The combination of particle and preposition may be focused, (3a), while neither the locative particle nor the locative PP may be

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focused alone, (3b), (3c).

- (3) a. Det var **ovre i Sverige** det skete.
It was over in Sweden it happened
 b. * Det var **ovre** det skete **i Sverige**.
It was over it happened in Sweden
 c. * Det var **i Sverige** det skete **ovre**.
It was in Sweden it happened over

The conclusion is that 'locative adverbs' are prepositions forming complex prepositions in combination with 'ordinary' prepositions.

The meaning of the complex preposition is composed of the meaning of the parts. I term 'ordinary' prepositions *Lexical Prepositions* because they have a lexically specified locative relation. Locative particles are characterized by a totally underspecified locative relation and by raising an argument from the lexical preposition. They are termed *Raising Prepositions*.

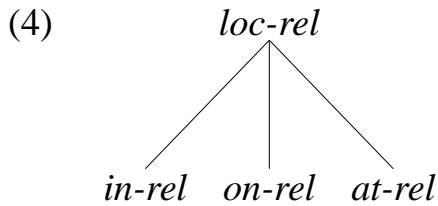
In the set-up I propose here, locative prepositions – lexical as well as raising – always denote a state, a locational relation between two entities, *figure* and *ground*. This locative state is furthermore related temporally to another event. The semantics of locative prepositions may therefore to a large degree be modelled with two features, a locative relation and a temporal relation, both of which may be partially underspecified lexically.

One function of Raising Prepositions is to specify the temporal relation in combination with partially underspecified lexical prepositions. Raising prepositions furthermore express a relation between two locations termed an *interlocational relation*. What locations are related depends on the type of preposition (directional or stative), and if stative on the context.

Sections 1. and 2. introduce the locative and temporal relations, then in section 3. the inventory of Danish Lexical Prepositions is described, and section 4. deals with the inventory of Danish Raising Prepositions and their interaction with Lexical Prepositions. Section 5. deals with interlocational relations, and finally, section 6. gives a summary.

1. Locative Relations

Locative prepositions denote locative relations between two entities. There are three basic locative relations, an *in-relation*, an *on-relation* and an *at-relation*.

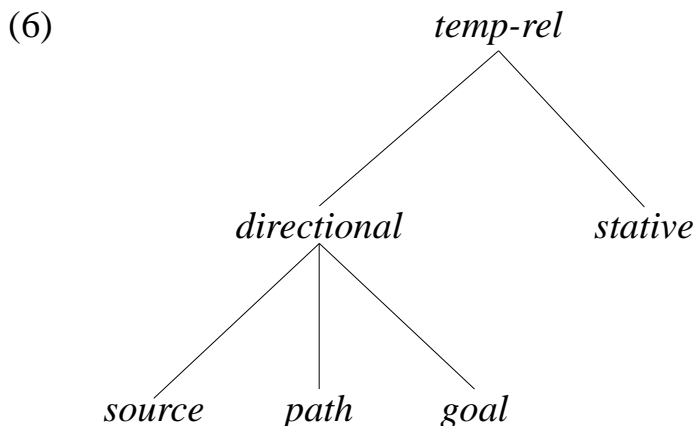


The Danish preposition *i*, 'in', denotes an *in-relation*, *på*, 'on', an *on-relation* and *ved*, 'at', an *at-relation*, while other cases are less obvious. To determine what relation a non-stative preposition expresses, one must imagine the corresponding stative situation(s) and see which of the basic locative relations describes it. In (5a) the stative situation before they drive is that they are **in** the city and *ud af* therefore has an *in-relation*. In (5b) the soldier is **on** the road while marching and *hen ad* has an *on-relation*, and in (5c) the dog is **at** the fence while running and *langs* has an *at-relation*.

- (5) a. De kørte **ud af** byen.
They drove out of city_the
 b. Soldaten marcherede **hen ad** vejen.
Soldier_the marched along road_the
 c. Hunden løb **langs** hegnet.
Dog_the ran along fence_the

2. Temporal Relations

The locative state denoted by locative prepositions is temporally (in some cases also causally) related to another subevent. There are four possible temporal relations as shown in (6).



The temporal relations are exemplified in (7).

- (7) a. Hunden kom **inde fra** haven
 Dog_the came in from garden_the
 b. Hunden løb **langs** hegnet
 Dog_the ran along fence_the
 c. Hunden løb **ind i** haven
 Dog_the ran into in garden_the
 d. Hunden løb rundt **inde i** haven
 Dog_the ran about in in garden_the

In (7a) the state denoted by the preposition precedes the process denoted by the verb. The dog must have been in the garden prior to its motion and it must have left the garden (stopped being in the garden) at some point during the motion. I follow tradition in calling this kind *source*. In (7b) the state denoted by the preposition and the process denoted by the verb are simultaneous. This is called *path*. In (7c) the state denoted by the preposition follows the process of the dog running and is (construed as) caused by it. The process may go on simultaneously with the state, but there must be an initial period where the process but not the state obtains, i.e. the dog must start running before it reaches the garden. This is called *goal*. Finally, in (7d) the state denoted by the preposition is simultaneous with the event denoted by the verb but may obtain before as well as after this event. In contrast to (7b) the preposition is appropriate even if the dog stops running. This is called *stative*.

3. Lexical Prepositions

With the exception of *fra*, 'from', all lexical prepositions are specified for locative relation as opposed to raising prepositions which are always totally underspecified for this relation. Below the inventory of Danish lexical prepositions is presented arranged by temporal relation.

3.1 *Source*

Danish has two *source* prepositions *fra* and *af*. As may be seen from (8), *fra* is underspecified for the locative relation and can express all three relations:

- (8) a. Peter kom inde **fra** haven.
 Peter came in from garden_the
 'Peter came from within the garden'

- b. Bolden rullede inde **fra** fortovet ud på gaden.
Ball_the rolled in from pavement_the out onto street_the
- c. Pigen kom løbende henne **fra** træet.
Girl_the came running (over) from tree_the

In (8a) Peter was **in** the garden, in (8b) the ball was **on** the pavement, and in (8c) the girl was **at** the tree. The other *source* preposition is *af*, (9).

- (9) Vandet løb ud **af** badekarret på to minutter.
Water_the ran out of bathtub_the on(in!) two minutes

Af expresses an *in-relation*. In (9) the water is in the bathtub prior to its running out. It is interesting that even though both *fra* and *af* express an *in-relation* in (8a) and (9) respectively, the two prepositions cannot be switched:

- (10) a. * Peter kom inde **af** haven.
Peter came in from garden_the
- b. * Vandet løb ud **fra** badekarret.
Water_the ran out from bathtub_the

To account for the data in (10) I suggest that Danish has in fact two *fra* prepositions. *Fra*₁ combines with long forms of raising prepositions and is underspecified for the locative relation, (8). *Fra*₂ is underspecified as having either an *on-relation* or an *at-relation*, but not an *in-relation* which explains why (10b) is out. Both *fra*₂ and *af* combines with short form raising prepositions only, explaining the ungrammaticality of (10a).

Another difference between *fra*₁ on the one hand and *fra*₂ and *af* on the other is shown in (11).

- (11) a. * Peter kom inde **fra** haven på et minut.
Peter came in from garden_the in one minute
- b. Hunden løb hjem **fra** skoven på ti minutter.
Dog_the ran home from wood_the in ten minutes
- c. Hunden løb ud **af** haven på et minut.
Dog_the ran out of garden_the in one minute

Compatibility with *på et minut* indicates telicity, in this case a goal. The sentence with a *fra*₁-PP cannot be modified by *på et minut* while the sentence with a *fra*₂ or an *af*-PP can, suggesting that *fra*₂ and *af* are more

complex than *fra*₁, denoting not just the source but also, though entirely underspecified, the goal.

3.2 Path

There are three simple *path* prepositions, each expressing one of the basic locative relations.

- (12) a. De rejste **via** Berlin.
They travelled via Berlin
 b. Soldaten marcherede hen **ad**₁ vejen.
Soldier_{the} marched along road_{the}
 c. Hunden løb **langs** hegnet.
Dog_{the} ran along fence_{the}

In (12) the travellers were **in** Berlin at some point during their travel, in (12b) the soldier was **on** the road while marching and in (12c) the dog was **at** the fence while running.

Three *path* prepositions may be modified by a *på et minut*, 'in a minute' phrase indicating that they are complex denoting also an underspecified goal.

- (13) a. Tyven kravlede ud **ad**₂ vinduet på ti sekunder.
Thief_{the} climbed out of window_{the} on ten seconds
 b. Hunden løb **gennem** røret på ti sekunder.
Dog_{the} ran through tube_{the} on ten seconds
 c. Manden gik **forbi** søen på en halv time.
Man_{the} went past lake_{the} in a half hour

Ad and *gennem* have an *in-relation*, while *forbi* has an *at-relation*.

Because of their phonetic and semantic similarities *ad*₂ and *af* are often confused, and *ad*₂ is perhaps on its way to become obsolete. In careful Danish the difference is – as described above – that the complement of *af* denotes the source of the motion, while the complement of *ad*₂ denotes the path. The two sentences in (14) may describe the same situation of Peter leaving the house. (14a) says that he was *in the house* before the motion, and (14b) that at some later point he was *in the door(way)*.

- (14) a. Peter gik ud af huset.
Peter went out of house_{the}

- b. Peter gik ud ad₂ døren.
Peter went out of door_{the}

3.3 Goal

There are two non-underspecified *goal* prepositions exemplified in (15).

- (15) a. Peter løb hen **til** bussen.
Peter ran (over) to bus_{the}
 b. Peter løb hen **mod** bussen.
Peter ran (over) toward bus_{the}

In both cases the PPs denote the resulting state '(Peter) at the bus', but while (15a) says that the state occurs, (15b) says merely that the state will occur in case nothing prevents it from occurring. It is therefore not possible to deny the coming about of the state in a sentence with *til*, (16a), but possible in a sentence with *mod*, (16b).

- (16) a. * Peter løb hen **til** bussen, men nåede den ikke.
Peter ran (over) to bus_{the} but caught it not
 b. Peter løb hen **mod** bussen, men nåede den ikke.
Peter ran (over) toward bus_{the}, but caught it not

I distinguish between 'actual' and 'potential' states.

Two prepositions are underspecified as being either goal or stative. *I* denotes an *in-relation*, in (17a) the garden is the goal of the motion, and in (17b) it is the stative location.

- (17) a. Han gik ud **i** haven.
He went out in garden_{the}
 b. Han læste ude **i** haven.
Han read out in garden_{the}

På denotes an *on-relation*, in (18a) the road is the goal of the motion, and in (18b) it is the stative location.

- (18) a. De løb ud **på** vejen.
They ran out on road_{the}
 b. De løb ude **på** vejen.
They ran out on road_{the}

The six prepositions *foran* - *bag*, *over* - *under*, *blandt/mellem* fit less readily into the system. They denote a goal (19a) or a stative location (19b), but at least some of them may also denote path (19c). Furthermore, the locative relation they express is in each case more specific than just the *at-relation*.

- (19) a. Han gik ind **under** halvtaget.
 He went in under lean-to_the
 b. Han stod inde **under** halvtaget.
 Han stood in under lean-to_the
 c. Han gik **under** halvtaget hen til bilen.
 Han went under lean-to_the (over) to car_the

3.4 Stative

Danish has two non-underspecified stative prepositions shown in (20) and (21).

- (20) Katten lå henne **ved** skorstenen.
 Cat_the lay (over) at chimney_the
 (21) Han boede **hos** sin moster.
 He lived at his aunt

Both have an *at-relation*, the difference is that *ved* takes a non-human complement, while *hos* takes a human complement.

In table 1 the inventory of Danish lexical prepositions are arranged according to the locational and temporal relations they express.

4. Raising Prepositions

A small group of Danish raising prepositions ('locative adverbs') are characterized by three different forms: a short-form expressing the goal of a motion (22a), an *ad*-form expressing the potential goal of a motion (22b), and a long-form expressing the source of a motion (22c) or the stative location of something, (22d).

- (22) a. Drengen løb **hjem**.
 Boy_the ran home
 b. Drengen løb **hjemad**.
 Boy_the ran homeward
 c. Drengen løb **hjemme** fra haven ud til stranden.
 Boy_the ran home from garden_the out to beach_the

- d. Drengen legede **hjemme**.
Boy_{the} played home

	Source		Path		Goal	Stative	
	simple	+goal	simple	+goal			
in	fra ₁ from	af of	via via	ad ₂ , gennem of, through	i in		
on		fra ₂ from	ad ₁ along		på on		
at				langs along	forbi past	mod, til toward, to	hos/ved at
			foran - bag, over - under, blandt/mellem in front of, behind, over, under, between				

Table 1: Locative Lexical Prepositions

Raising prepositions combine optionally with lexical prepositions to form a complex preposition except for *hen* and *om* which cannot function on their own but must be part of a complex preposition.

The semantics of the complex preposition is composed of the semantics of the raising and the lexical preposition. Raising prepositions are totally underspecified for the locative relation, but specified to some degree for temporal relation. To give an example, the lexical preposition *i*, 'in', may be either goal or stative, but in combination with a raising preposition there is no ambiguity, (23a) being goal, and (23b) stative.

- (23) a. Hunden løb **ind i** haven.
Dog_{the} ran into garden_{the}
 b. Hunden løb **inde i** haven.
Dog_{the} ran inside garden_{the}

The long form of raising prepositions is stative, (23b), or source, (24):

- (24) Hunden kom løbende **inde fra** haven.
Dog_the came running in from garden_the
 'The dog came running from within the garden.'

However, no ambiguity arises, since no lexical prepositions have a similar underspecification. When used alone, ie. not in combination with a lexical preposition, the long form of raising prepositions expresses stativity. (25) can only mean that the children rollerskated somewhere, presumably inside the house, not that the house was the source of their motion going somewhere else.

- (25) Børnene løb på rulleskøjter **inde**.
Children_the ran on rollerskates in

When used alone short raising prepositions express actual goal:

- (26) Han svømmede **ind**.
He swam in.

They may be combined with actual state prepositions, (27), in which case the result is an actual state reading, but also with potential state prepositions, (28), yielding potential state reading.

- (27) Han svømmede **ind til** bredden (*men nåede den ikke).
He swam in to shore_the but reached it not
- (28) Han svømmede **ind mod** bredden (men nåede den ikke).
He swam in toward shore_the but reached it not

The *-ad*-form of raising prepositions expresses potential goal both alone and in the combination with a lexical preposition which must also express potential goal:

- (29) Han svømmede **indad**.
He swam inward
- (30) Han svømmede **indad mod** bredden.
He swam inward toward shore_the

It cannot be combined with an actual state lexical preposition:

- (31) * Han svømmede **indad til** bredden.
He swam inward to shore_the

The inventory of Danish *Raising Prepositions* is shown in table 2.

Goal		Stative(/Source)	Gloss
act (/pot)	potential		
<i>ind</i>	<i>indad</i>	<i>inde</i>	'in(to)'
<i>ud</i>	<i>udad</i>	<i>ude</i>	'out'
<i>op</i>	<i>opad</i>	<i>oppe</i>	'up'
<i>ned</i>	<i>nedad</i>	<i>nede</i>	'down'
<i>frem</i>	<i>fremad</i>	<i>fremme</i>	'ahead'
<i>om</i>	<i>omad</i>	<i>omme</i>	'(behind)'
<i>over</i>	<i>overad</i>	<i>ovre</i>	'over'
<i>hjem</i>	<i>hjemad</i>	<i>hjemme</i>	'home'
<i>hen</i>	<i>henad</i>	<i>henne</i>	'(over)'
<i>bort</i>	-	<i>borte</i>	'away'
<i>tilbage</i>	<i>tilbagead</i>	<i>tilbage</i>	'back'

Table 2: Raising Prepositions

5. Interlocational Relation

Raising prepositions also contribute information on the relation between two locations. In cases involving motion this relation holds between source and goal, in stative cases typically between the location denoted by the complement of the preposition and the location of the speaker or addressee. The various forms of a raising preposition express the same interlocational relation, thus *ud*, *ude*, *udad* all say that some location is 'out' in relation to some location, which is correspondingly 'in'. In both sentences in (32) the sea is 'out' in relation to the place from where the dog ran.

- (32) a. Hunden løb **ud til** havet.
 Dog_the ran out to sea_the
 b. Hunden løb **udad mod** havet.
 Dog_the ran outwards toward sea_the

In (33) *inde* says that the garden is 'in' in relation to the place the dog goes.

- (33) Hunden kom **inde fra** haven.
 Dog_the came in from garden_the
 'The dog came from within the garden.'

In statives there are more options. In most cases the place denoted by the complement of the prepositions is related to the location of the utterance (34a), but it may also be related to the location of the addressee (34b) (e.g. shouted into the house or said in a cellular phone) or indeed any other referencepoint (34c) if none of the above mentioned two possibilities are available.

- (34) a. Børnene leger **ude i** haven.
Children_the play out in garden_the
 b. Vi sidder her **ude i** haven.
We sit here out in garden_the
 c. Der er dejligt her **ude i** haven, hva'.
There is lovely here out in garden_the, right

6. Summary

In this article the Danish inventory of prepositions has been described. It has been argued that two types of preposition should be recognized, *lexical* and *raising preposition*, which combine to form a complex preposition. To represent essential parts of the meaning of locative prepositions only two features are needed, a stative locative relation and a temporal relation relating this locative state to another event. It has been argued that raising prepositions furthermore express a relation between two locations termed an *interlocational relation*.

The proposed analysis has been formalized within the framework of HPSG (Pollard and Sag (1994)), and implemented on the ConTroll platform (Götz et al. (1997)). However, lack of space prevents me from presenting the formalization here.

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